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INTERNATIONAL PRELIMINARY EXAMINATION REPORT



(PCT Article 36 and Rule 70)

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| Applicant's or agent's file reference | FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416) | |
| International application No. PCT/KR2003/001386 | International filing date (day/month/year) 12 JULY 2003 (12.07.2003) | Priority date (day/month/year) 16 JULY 2002 (16.07.2002) |
| International Patent Classification (IPC) or national classification and IPC IPC7 F16H 3/76, F16H 3/44 | | |
| Applicant Jo, Koang-Ho | | |

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 5 sheets, including this cover sheet.
- ☐ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).
- These annexes consist of a total of sheets.

3. This report contains indications relating to the following items:
- I ☒ Basis of the report
 - II ☐ Priority
 - III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
 - IV ☐ Lack of unity of invention
 - V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
 - VI ☐ Certain documents cited
 - VII ☐ Certain defects in the international application
 - VIII ☒ Certain observations on the international application

| | |
|--|--|
| Date of submission of the demand 17 FEBRUARY 2004 (17.02.2004) | Date of completion of this report 16 NOVEMBER 2004 (16.11.2004) |
| Name and mailing address of the IPEA/KR  Korean Intellectual Property Office 920 Dunsan-dong, Seo-gu, Daejeon 302-701, Republic of Korea Facsimile No. 82-42-472-7140 | Authorized officer KIM, Kwang Oh Telephone No. 82-42-481-5452  |

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/KR2003/001386

I. Basis of the report

1. With regard to the elements of the international application:*

☒ the international application as originally filed☐ the description:

pages _____, as originally filed

pages _____, filed with the demand

pages _____, filed with the letter of _____

☐ the claims:

pages _____, as originally filed

pages _____, as amended (together with any statement) under Article 19

pages _____, filed with the demand

pages _____, filed with the letter of _____

☐ the drawings:

pages _____, as originally filed

pages _____, filed with the demand

pages _____, filed with the letter of _____

☐ the sequence listing part of the description:

pages _____, as originally filed

pages _____, filed with the demand

pages _____, filed with the letter of _____

2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language English which is☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).☒ the language of publication of the international application (under Rule 48.3(b)).☐ the language of the translation furnished for the purposes of international preliminary examination (under Rules 55.2 and/or 55.3).

3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

☐ contained in the international application in written form.☐ filed together with the international application in computer readable form.☐ furnished subsequently to this Authority in written form.☐ furnished subsequently to this Authority in computer readable form.☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.4. ☐ The amendments have resulted in the cancellation of:☐ the description, pages _____☐ the claims, Nos. _____☐ the drawings, sheets _____5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).**

* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this opinion as "originally filed." and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17).

** Any replacement sheet containing such amendments must be referred to under item I and annexed to this report.

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V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

| | | | |
|-------------------------------|--------|-------|-----|
| Novelty (N) | Claims | 1 - 4 | YES |
| | Claims | | NO |
| Inventive step (IS) | Claims | 1 - 4 | YES |
| | Claims | | NO |
| Industrial applicability (IA) | Claims | 1 - 4 | YES |
| | Claims | | NO |

2. Citations and explanations (Rule 70.7)

Reference is made to the following documents:

D1: KR 2000-12155
D2: KR 2000-73560
D3: JP 2000-16102
D4: JP 6-109089
D5: EP 143365
D6: US 4,327,604

I. Novelty

The subject-matter of claims 1-4 is novel over the available prior art (PCT Article 33(2)).

II. Inventive step

D1 discloses a stepless speed changer including: a linear gear connected to the driving shaft; a ring gear installed to run by the torque transmitted from the linear gear; many planetary gears inter-positioned between the linear gear and the ring gear, and geared to both of them to transmit the driving power; and a carrier supporting many planetary gears, and installed so that it may rotate on the same rotary shaft as the linear gear and the ring gear.

(Continued on supplemental sheet.)

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VIII. Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

The description does not state the working process of the technical features sufficiently. Therefore, the description does not disclose the invention in a manner sufficiently clear and complete for the invention to be carried out by a person skilled in the art.

The technical features of power distribution elements and unidirectional clutches, described in claim 1, are not clearly defined in the description.

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Supplemental Box

(To be used when the space in any of the preceding boxes is not sufficient)

Continuation of:

Box No. V.2.

D2 discloses a gear type continuously variable transmission of a car including a line gear receiving electric power from an engine, pinion gears arranged around the line gear, and a ring gear receiving the pinion gears in the inside and coupled with the pinion gears for rotating with the pinion gears following the circumference of the internal surface. Said transmission is characterized in that a pump type hydraulic motor is connected with a hydraulic controlling part in a predetermined position of the line gear, so that the electric power transmitted from the engine and the electric power applied to the hydraulic controlling part automatically realize the continuously variable shift in a gear box having the ring gear and the pinion gear by reciprocal rotating movement.

D3 discloses a hydraulic/mechanical continuously variable transmission device structured so that an hydrostatic continuously variable transmission device and a planetary gear mechanism are combined to perform shifting of the output rotation. Said transmission is characterized in that a transmission case surrounding the planetary gear mechanism also serves as a casing for a hydrostatic continuously variable transmission.

D4 discloses a continuously variable transmission to improve the response speed and reduce dimension by varying the brake power acting on the ring roller of a transmission by controlling the discharge quantity of a hydraulic pressure generating means, as for a continuously variable transmission using a traction drive planetary gear mechanism.

D5 discloses a continuously variable power transmission having a load-switching gear unit which consists of two part gear units. One part gear unit of said gear units is a continuously adjustable torque-dividing coupled gear unit, and the other part gear unit of said gear units is a switching gear unit which is driven alternatively by one of the two coupled shafts.

D6 discloses a continuously variable transmission for a motor vehicle which consists of two planetary gear sets and overrunning clutches to continuously modify said transmission reduction ratio as a function of the output shaft load conditions.

Claims 1-4 meet the criteria set out in PCT Article 33(3), because the prior art does not teach or fairly suggest any of the embodiments as specifically set forth in the claims.

III. Industrial applicability

Claims 1-4 meet the criteria set out in PCT Article 33(4), because all the claims are considered to be industrially applicable.